X-ray backlit imaging of an implosion core to measure the in-flight pusher density of an indirect drive capsule* D.H. Kalantar, K.S. Budil, B.A. Hammel, O.L. Landen, and C.J. Keane, *Lawrence Livermore National Laboratory* - Both the efficiency of an implosion and the growth rate of hydrodynamic instability increase with the aspect ratio of an implosion. In order to study the physics of implosions with high Rayleigh-Taylor growth factors, we use doped ablators which should minimize x-ray preheat and shell decompression, and hence increase in-flight aspect ratio. We present x-ray backlit images[1] of indirectly-driven capsules measuring such in-flight aspect ratios for doped ablators. Backlit 4.7 keV images of the full capsule are recorded throughout the implosion phase with 80 ps and 15 mm resolution. We inferred the radial density profile as a function of time by Abel inverting the x-ray transmission profiles. We will present measurements of the in-flight density using a Ge-doped ablator.

[1] M. Katayama *et al*, Rev. Sci. Instrum. **64**, 706 (1993).

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